UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,390	05/02/2001	Ming C. Hao	10003407-1	6484

7590 10/18/2007

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
PHAM, KHANH B	

ART UNIT	PAPER NUMBER
2166	

MAIL DATE	DELIVERY MODE
10/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/847,390
Filing Date: May 02, 2001
Appellant(s): HAO ET AL.

LeRoy D. Maunu
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 9, 2007 appealing from the Office action mailed December 30, 2003

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

Claims ***22,23,28,29,30*** been canceled [4/4/2007].

This appeal involves claims ***1-21,24-27,31-33*** [4/4/2007].

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims ***1-21,24-27,31-33*** contained in the Appendix [filed on 4/4/2007] to the brief is correct.

(8) Evidence Relied Upon

5794209	Agrawal et al	8 1998
WO 01/08072	Ratnavale, et al	2 2001

a) Gunjan K Gupta et al., "Detecting seasonal trends and cluster motion visualization for very high dimensional transactional data", proceedings of first international SIAM conference on Data Mining (SDM01),April 2001, pp 1-18

b) Javeed Zaki et al., [hereafter Zaki], Evaluation of sampling for data mining of association rules, 7th Wkshp.Resrch.Iss.Data Engg, 1996, pp1-9

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-14,16,19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunjan K Gupta et al., [hereafter Gupta], Detecting seasonal trends and cluster motion visualization for very high dimensional transactional data, proceedings of first international SIAM conference on Data Mining (SDM01), April, 2001, pp 1-18, in view of Agrawal et al., [hereafter Agrawal], US Patent No. 5794209.

2. As to Claim 1, 11, 13, 21,24, Gupta teaches a system which including 'visualizing information' [see Abstract], 'receiving information having plurality of items' [page 2, line 33-36], plurality of items corresponds to data set having 10,000 or more products as detailed in page 2, line 33-35, 'generating a graph of the items by arranging the items on a spherical surface to specify an initial position of each item' [page 11, item 5.2, fig 4a-4b], Gupta specifically directed to generating three dimensional graph with respect to data clusters as detailed in fig 4a-4b, 'constructing a frequency matrix for defining a stiffness measure of a spring attached to each pair of items' [page 11, item 5.2, page 13, line 1-14, table 2], Gupta specifically suggests for example type of

cluster, closet cluster and time frequency for specific customer between two different time limits that corresponds to frequency matrix; 'relaxing the graph, wherein after relaxation the graph converges to a state of local minimal energy, wherein the distance between a pair of items represents the frequency of the item set in the transaction data' [page 14, fig 7-8], 'association directions between the items in the transaction data' [page 10, line 5-36]. It is however, noted that Gupta does not specifically teach' employing a directed edge to represent the association confidence levels'. On the other hand, Agrawal disclosed 'employing a directed edge to represent the association confidence levels' [col 3, line 53-62], Agrawal specifically directed to user-defined minimum support confidence level with respect to large item sets and subsets as detailed in col 3, line 53-62.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate Agrawal et al., into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., because both are directed to knowledge discovery with respect to user or customer transactions or purchasing, more specifically Gupta is directed to transactional data particularly e-commerce business data presented in a visualization schemes [see Abstract], while Agrawal et al., is directed to quickly mining association rules in databases, more specifically, discovering consumer purchasing tendencies that specifically identifies customer transaction item sets that are stored in a database [see Abstract]. One of the ordinary skill in the art the time of applicant's invention to

combine the references because that would have allowed uses of Gupta to implement computer program product that selects specific subsets of itemsets and satisfies the minimum confidence criteria defined by the user, further satisfies rules associated the discovering trends between item set recurrence at least equals user-defined confidence as suggested by Agrawal et al., [see Abstract, col 3, line 45-62], thus improving accuracy and performance of data analysis.

3. As to claim 2, 14, Agrawal disclosed 'generating a confidence matrix for defining the confidence level of each association' [col 4, line 15-25].

4. As to Claim 3, 26, Agrawal disclosed 'receiving a user-defined minimum confidence level' [col 3, line 54-62], 'displaying items having an association with a confidence level that is in a predetermined relationship with the user-defined minimum confidence level' [fig 2, col 6, line 5-18].

5. As to Claim 4, 27, Agrawal disclosed 'receiving a plurality of items' [col 6, line 6-7], 'receiving internet transaction data' [col 5, line 48-51, line 53-61], 'transactions, products, transactions' [col 7, line 25-40].

6. As to Claim 5, 12, 28, Agrawal disclosed 'plurality of transactions, where each transaction includes one or more items' [col 7, line 41-45]. On the other hand, Gupta disclosed 'generating a graph of the items by arranging the items on a spherical surface

to specify an initial position of each item, organizing the items based on how frequently the items appear in transactions' [page 8, item 4.2], 'specifying the initial position of each item in one of a random fashion and a predetermined fashion' [page 10, line 5-37].

7. As to Claim 6, 29, the limitation of this claim have been noted in the rejection of above claim 5. In addition, Gupta disclosed 'distributing the items equally on a spherical surface, wherein tightness is a sum of all supports from a current item to directly adjacent items, and wherein more tightly related items are disposed in the center of the sphere and the less tightly related items are evenly distributed around the center' [page 11, item 5.2, fig 4a-4b].

8. As to Claim 7, 30, the limitation of this claim have been noted in the rejection of above claim 6. In addition, Gupta and Agrawal both teach statistical analysis of large data sets [see Gupta: Abstract; Agrawal: Abstract], Gupta also teaches 'distributing the items equally on a spherical surface [see fig 4a-4b]. It is however noted that sampling of data sets are integral part of both Gupta and Agrawal's teaching because they are directed to sampling of data sets. It is noted that sampling is based on stochastic sampling, more specifically based on Poisson distribution is common knowledge in the art, further Poisson disc sampling is based on Poisson distribution with minimum-distance constraint between samples either added or removed points at random to any previous points.

9. As to Claim 8, 31, Gupta disclosed 'frequency matrix includes a plurality of elements, wherein each element includes the frequency of occurrence of the association in all transactions after normalization' [fig 4; page 11, item 5.2], Gupta specifically directed to position matrix that specifically indicate at least trends discovered using visualization.

10. As to Claim 9-10, 32-33,the limitation of this claim has been noted in the above claim 8. In addition, Gupta disclosed 'three-dimensional sphere wherein the distance between each pair of items represents the support there between' [see fig 4].

11. As to Claim 16, Gupta disclosed 'market basket analysis application' [see Abstract].

12. As to Claim 19-20, Agrawal disclosed 'text mining application' [see Abstract, fig 1]

13. Claims 15,17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunjan K Gupta et al., [hereafter Gupta], Detecting seasonal trends and cluster motion visualization for very high dimensional transactional data, proceedings of first international SIAM conference on Data Mining (SDM01), April, 2001, pp 1-18, Agrawal et al., [hereafter Agrawal], US Patent No. 5794209 as applied to Claim 1,11 above, further in view of Ratnavale et al., [hereafter Ratnavale], WO 01/08072A1

14. As to Claim15, Gupta disclosed 'visually associate product affinities and relationships' [see fig 4-6], while Agrawal teaches large itemsets related to transaction data [see Abstract], however, it is noted that both Gupta and Agrawal do not specifically teach 'electronic commerce web site, products for sale'. On the other hand Ratnavale disclosed 'electronic commerce web site, products for sale' [see Abstract, fig 6-7].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate teaching of Ratnavale into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., and quickly mining association rules in databases of Agrawal et al., because that would have allowed users of Gupta, Agrawal to access interactive market system via world wide web or internet based product sales and services of Ratnavale [see Abstract, fig 1], further bringing the advantages of multiple buyers, vendors to

customize the market to meet their individual needs in real-time via Internet as suggested by Ratnavale [page 3, line 12-16].

15. As to Claim 17-18, Ratnavale disclosed 'telecommunications, network traffic analysis application [page 7, line 20-28, fig 1].

16. Claims 1,11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gunjan K Gupta et al., [hereafter Gupta], Detecting seasonal trends and cluster motion visualization for very high dimensional transactional data, proceedings of first international SIAM conference on Data Mining (SDM01), April, 2001, pp 1-18, in view of Mohammed Javeed Zaki et al., [hereafter Zaki], Evaluation of sampling for data mining of association rules, 7th Wkshp.Resrch.Iss.Data Engg, 1996, pp1-9

17. As to Claim 1, 11, Gupta teaches a system which including 'visualizing information' [see Abstract], 'receiving information having plurality of items' [page 2, line 33-36], plurality of items corresponds to data set having 10,000 or more products as detailed in page 2, line 33-35, 'generating a graph of the items by arranging the items on a spherical surface to specify an initial position of each item' [page 11, item 5.2, fig 4a-4b], Gupta specifically directed to generating three dimensional graph with respect to data clusters as detailed in fig 4a-4b, 'constructing a frequency matrix for defining a stiffness measure of a spring attached to each pair of items' [page 11, item 5.2, page 13, line 1-14], 'relaxing the graph, wherein after relaxation the graph

converges to a state of local minimal energy, wherein the distance between a pair of items represents the frequency of the item set in the transaction data' [page 14, fig 7-8], 'association directions between the items in the transaction data' [page 10, line 5-36]. It is however, noted that Gupta does not specifically teach' employing a directed edge to represent the association confidence levels'. On the other hand, Zaki disclosed 'employing a directed edge to represent the association confidence levels' [page 6, col 1, item 4.4, col 2, fig 5].

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate Zaki et al., into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., because both are directed to data analysis, more specifically Gupta is directed to transactional data particularly e-commerce business data presented in a visualization schemes [see Abstract], while Zaki et al., is directed to Evaluation of sampling for data mining of association rules, more specifically, sampling, analyzing large volumes of transactional business data using association rules [see Abstract]. One of the ordinary skill in the art the time of applicant's invention to combine the references because that would have allowed uses of Gupta to effectively sampling the various transactional related data, more specifically sampling item set size and large item sets for stabling accuracy measurements, further establishing confidence levels between various sampling data sets as suggested by Zaki et al., [see page 2, col 2, sampling algorithm,

fig 2, page 6, col 1, item 4.4], thus improving accuracy and performance of data analysis.

(10) Response to Argument

a) At page 5, claims 1,11,21,24, applicant argues that neither Gupta's figures describe or show either a spherical surface or arranging items on a spherical surface.

As to the argument [a], Examiner disagree with applicant because, firstly, Gupta is directed to visualization of transactional data [Gupta: title, page 1, line 1-2, line 18-19] similar to applicant's visualization of transactional data [see applicant's abstract, page 25, line 1-3], secondly, Gupta also teaches displaying or visualization of transactional data in three dimensional manner, specifically showing "three dimensional histogram" [Gupta: fig 4a-4b] corresponds to "spherical surface" because, x-y-z axis data represent transactional data volume, therefore, Gupta's fig 4a-4b specifically teaches "spherical surface".

b) At page 5, claim 1, applicant argues that "Gupta's teachings do not in any apparent way teaches the stiffness measure of a spring or using this as attaching pair of items".

As to the above argument [b], as best understood by the examiner, Gupta specifically suggests type cluster, closet cluster and time frequency for specific

customer data between two different time limits that corresponds to frequency matrix, further Gupta also suggests for example two sets of clusters defining peak- season, off-peak season that establishes "stiffness measure" of items [see table : 2], also it is considered to be "stiffness measure" among "clusters" or cluster data representing time frequency of "peak-season" and "off-season" corresponds to typical time frequency matrix that defines the "stiffness measurement" of items, furthermore, Gupta's table 2 [page 11] specifically teaches relational between time range and closet cluster and type of clusters represents "spring stiffness" to a time range between clusters. It is also noted from specification, at page12, line 10-12 that "**physics-based mass-spring system that is *generally well-known* graphing technique into a visual data mining platform**"

c) At page 5, claims 2, 14, 25, applicant argues that the office action does not show any evidence of a matrix in Agrawal".

As to the argument [c], as best understood by the examiner, Agrawal is directed to mining association rules in databases, more specifically, mining rules that identifies transaction itemsets that are stored in a database and calculating user-defined minimum number of times, further mining association rules also calculates the itemsets by comparing the ratio of the number of times each of the large itemsets appears in the database to the number of times particular subsets of the itemset in the database

[see Abstract, col 3, line 54-62], further, it is noted that fig 9 specifically directed to content of the itemssets in tables or matrix.

d) At page 6, claim 7, applicant argues that office actions fail to show that either Gupta or Agawal suggests distributing the items equally on a spherical surface by employing a Poisson Disc Sample.

As to the argument [d], as best understood by the examiner, both Gupta, Agrawal specifically teaches "statistical" analysis of large data items or data sets [see Gupta: page 8, line 11-17; Agrawal: col 4, line 29-37], furthermore, Gupta suggests "distributing the items on spherical surface [see fig 4a-4b] for visualization of transactional data. It is further noted that sampling of large itemsets determines and generates count and AprioriTid method generates successive sets of successively longer candidate large itemsets as detailed in fig 8, col 9, line 32-37 and the probability observed in k-itemset contained in transactions, therefore, Poisson distribution defines such that number of itemssets that appeared or transformed set equal to the sum of all transaction sets [Agrawal: col 9, line 63-67].

e) At page 6-8, applicant argues that office action do not provide evidence of a motivation for modifying Gupta with the teachings of Agrawal, and therefore, the combination is improper.

In response to applicant's argument [e] that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Gupta is directed to trends and cluster motion visualization for transactional data, more specifically, visualization schemes of high volume transactional data studying trends, seasonal variations and like [see page 1, introduction], further Gupta also teaches generating graphs, more specifically generating dimensional graphs analyzing periodic trends for groups of products, particularly "sessions" [see page 2, item 3, page 4, 3.2]., for session detention graphs for various values have been detailed in fig 2. It is also noted that Gupta specifically teaches generating "three-dimensional graph with respect to data clusters, particularly, in "spherical surface" shape as detailed in fig 4a-4b [as noted above, x-y-z axis of Gupta's data represent transactional data volume, therefore, Gupta's fig 4a-4b specifically teaches "spherical surface"].

Agrawal et al. is directed to mining association rules in databases, more specifically, discovers association rules in the itemsets by comparing the ratio of the number of times each of the large itemsets appears in the database to the number of times particular subsets of the itemset appear in the database [see Abstract], Agrawal also allows for each transaction in the database determining large itemsets and calculating minimum support value and confidence value [col 7, line 25-33] . It is however, noted that Gupta does not disclose, "employing a directed edge to represent the association confidence levels". On the other hand, Agrawal disclosed this feature [Agrawal: col 3, line 53-62], particularly, Agrawal teaches user-defined minimum support confidence level with respect to large item sets and subsets as detailed in col 3, line 53-62.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate Agrawal et al., into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., because both are directed to knowledge discovery with respect to user or customer transactions or purchasing, more specifically Gupta is directed to transactional data particularly e-commerce business data presented in a visualization schemes [see Abstract], while Agrawal et al., is directed to quickly mining association rules in databases, more specifically, discovering consumer purchasing tendencies that specifically identifies customer transaction item sets that are stored in a database [see Abstract].

One of the ordinary skill in the art the time of applicant's invention to combine the references because that would have allowed uses of Gupta to implement computer program product that selects specific subsets of itemsets and satisfies the minimum confidence criteria defined by the user, further satisfies rules associated the discovering trends between item set recurrence at least equals user-defined confidence as suggested by Agrawal et al., [see Abstract, col 3, line 45-62], thus improving accuracy and performance of data analysis.

Therefore, Applicant's remarks are deemed not be persuasive, and claims 1-14,16,19-20,24,26-33 stand rejected under 35 USC 103(a) as being unpatentable over Gupta in view of Agrawal et al.

f) At page 8, claim 15, applicant argues that none of the cited teachings of Ratnavale make any reference to these limitations.

As to the above argument [f], as best understood by the examiner, Gupta specifically teaches not only transaction data related to customer's buying behavior, market segmentation [see Gupta's Abstract], but also "visualization schemes [see Abstract], particularly displaying transactional data related to seasonal trends [see page 3, fig 1-2], further, Gupta also teaches "3-D visualization of data set [see fig 4a-4b]. It is noted that Agrawal et al. is directed to mining association rules in databases, more specifically, discovers association rules in the itemsets by comparing

the ratio of the number of times each of the large itemsets appears in the database to the number of times particular subsets of the itemset appear in the database [see Abstract], Agrawal also allows for each transaction in the database determining large itemsets and calculating minimum support value and confidence value [col 7, line 25-33] .

It is however, noted that Gupta, Agrawal do not suggests "electronic commerce web site, products for sale", although Gupta, Agrawal are specifically teaches "large database of sales, customer transactions [see Agrawal: col 1, line 28-29; Gupta: page 1]. On the other hand, Ratnavale, specifically teaches internet based market, sales of products and services [see Abstract, fig 1] particularly electronic commerce using on-line products for sale [see Abstract, fig 6-7]. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate teaching of Ratnavale into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., and quickly mining association rules in databases of Agrawal et al., because that would have allowed users of Gupta, Agrawal to access interactive market system via world wide web or internet based product sales and services of Ratnavale [see Abstract, fig 1], further bringing the advantages of multiple buyers, vendors to customize the market to meet their individual needs in real-time via Internet as suggested by Ratnavale [page 3, line 12-16].

g) At page 8, claims 17-18, applicant argues that claims 17-18 include limitations of and related to using the claimed system in a telecommunications fraud application and in network traffic analysis application.....however, the cited sections do not appear to mention any applications related to telecommunications fraud or application related to network analysis.

As to the above argument [g], as best understood by the examiner, Ratnavale directed to internet based interactive market for sale of products and services, particularly, involving both buyers, sellers and financial transactions [page 4, line 15-19], further, Ratnavale also teaches e-commerce software for tracking, posting messages, billing system and like [page 7, line 28-32, fig 1], ensuring buyers, sellers confidence of using e-commerce software via wired or wireless connections [page 7, line 25-27]. It is also noted that Ratnavale's system not only automatically match buyers, and sellers price, quantity [page 7, line 35-37], but also automatic email notifications are sent to all participants i.e., "alert them [page 11, line 33-36], therefore, it is common knowledge from Ratnavale's reference that if there is "telecommunication fraud ", or in general any "fraud" on e-commerce, Ratnavale's reference have the ability to "alert" via at least e-mail.

h) At page 9-10, applicant argues that the alleged motivation for combining Ratnavale with the Gupta-Agrawal combination is improper because no evidence has been provided to suggest the combination.

In response to applicant's argument [h] that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Gupta is directed to trends and cluster motion visualization for transactional data, more specifically, visualization schemes of high volume transactional data studying trends, seasonal variations and like [see page 1, introduction], further Gupta also teaches generating graphs, more specifically generating dimensional graphs analyzing periodic trends for groups of products, particularly "sessions" [see page 2, item 3, page 4, 3.2]., for session detention graphs for various values have been detailed in fig 2. It is also noted that Gupta specifically teaches generating "three-dimensional graph with respect to data clusters, particularly, in "spherical surface" shape as detailed in fig 4a-4b [as noted above, x-y-z axis of Gupta's data represent transactional data volume, therefore, Gupta's fig 4a-4b specifically teaches "spherical surface"].

Agrawal et al. is directed to mining association rules in databases, more specifically, discovers association rules in the itemsets by comparing the ratio of the number of times each of the large itemsets appears in the database to the number of times particular subsets of the itemset appear in the database [see Abstract], Agrawal also allows for each transaction in the database determining large itemsets and calculating minimum support value and confidence value [col 7, line 25-33] . It is however, noted that Gupta does not disclose, "employing a directed edge to represent the association confidence levels". On the other hand, Agrawal disclosed this feature [Agrawal: col 3, line 53-62], particularly, Agrawal teaches user-defined minimum support confidence level with respect to large item sets and subsets as detailed in col 3, line 53-62.

It would have been obvious to one of the ordinary skill in the art at the time of applicant's invention to incorporate Agrawal et al., into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., because both are directed to knowledge discovery with respect to user or customer transactions or purchasing, more specifically Gupta is directed to transactional data particularly e-commerce business data presented in a visualization schemes [see Abstract], while Agrawal et al., is directed to quickly mining association rules in databases, more specifically, discovering consumer purchasing tendencies that specifically identifies customer transaction item sets that are stored in a database [see Abstract].

One of the ordinary skill in the art the time of applicant's invention to combine the references because that would have allowed uses of Gupta to implement computer program product that selects specific subsets of itemsets and satisfies the minimum confidence criteria defined by the user, further satisfies rules associated the discovering trends between item set recurrence at least equals user-defined confidence as suggested by Agrawal et al., [see Abstract, col 3, line 45-62], thus improving accuracy and performance of data analysis.

Furthermore, Ratnavale is directed to internet-based interactive market for sale of products and services, particularly business-to-business dynamic pricing solution that allows buyers and sellers to matches [page 3, line 32-37], also it is noted that Ratnavale teaches e-commerce software for tracking customers, posting messages, billing system and like [page 7, line 29-32]. Therefore, one of the ordinary skill in the art at the time of applicant's invention to incorporate teaching of Ratnavale into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., and quickly mining association rules in databases of Agrawal et al., because that would have allowed users of Gupta, Agrawal to access interactive market system via world wide web or internet based product sales and services of Ratnavale [see Abstract, fig 1], further bringing the advantages of multiple buyers, vendors to customize the market to meet their individual needs in real-time via Internet as suggested by Ratnavale [page 3, line 12-16].

i) At page 10-11, applicant argues that claims 1,11 is improper because the Examiner has failed to present a combination of references.....suggestion or motivation to combine the cited references.

In response to applicant's argument [i] that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, Gupta is directed to trends and cluster motion visualization for transactional data, more specifically, visualization schemes of high volume transactional data studying trends, seasonal variations and like [see page 1, introduction], further Gupta also teaches generating graphs, more specifically generating dimensional graphs analyzing periodic trends for groups of products, particularly "sessions" [see page 2, item 3, page 4, 3.2]., for session detention graphs for various values have been detailed in fig 2. It is also noted that Gupta specifically teaches generating "three-dimensional graph with respect to data clusters, particularly, in "spherical surface" shape as detailed in fig 4a-4b [as noted above, x-y-z axis of Gupta's data represent transactional data volume, therefore, Gupta's fig 4a-4b specifically teaches "spherical surface"].

Zaki is directed to evaluation of sampling for data mining of association rules, more specifically, random sampling of transactions in the database particularly different sampling values, relationship between performance, accuracy and confidence of the sample size [page 1, col 2], further it is noted that Zaki also teaches generating graphs particularly trends of sampled itemset size vs number of large k-itemsets as detailed in fig 2, page 4, col 2.

Therefore, one of the ordinary skill in the art at the time of applicant's invention to incorporate Zaki et al., into detecting seasonal trends and cluster motion visualization for very high dimensional transactional data of Gupta et al., because both are directed to data analysis, more specifically Gupta is directed to transactional data particularly e-commerce business data presented in a visualization schemes [see Abstract], while Zaki et al., is directed to Evaluation of sampling for data mining of association rules, more specifically, sampling, analyzing large volumes of transactional business data using association rules [see Abstract]. One of the ordinary skill in the art the time of applicant's invention to combine the references because that would have allowed uses of Gupta to effectively sampling the various transactional related data, more specifically sampling item set size and large item sets for stabling accuracy measurements, further establishing confidence levels between various sampling data sets as suggested by Zaki et al., [see page 2, col 2, sampling algorithm, fig 2, page 6, col 1, item 4.4], thus improving accuracy and performance of data analysis.

Therefore, Applicant's remarks are deemed not to be persuasive, and claims 1,11 stand rejected under 35 USC 103(a) as being unpatentable over Gupta in view of Zaki et al.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

For

Srirama Channavajjala

Kpham

KHANH B. PHAM
PRIMARY EXAMINER

Conferees:

Alam, Hosain
SPE 2166
May 8, 2007

Lee, Eddie
TQAS Appeal Specialist
TC2100

EDDIE C. LEE
SUPERVISORY PATENT EXAMINER